REVIEWS OF BOOKS

GENETICS

rlington, C. D. *The Evolution of Genetic Systems.* Cambridge, 1939. The University Press. Pp. xi+149. Price 10s. 6d.

HE first edition of Dr. Darlington's book *ecent Advances in Cytology* contained a ncluding chapter on the evolution of netic systems which has not been included the new edition. In considerably enlarged nd modified form, it has now been published s an independent book. Its aim is to " show enetics as the study of systems of heredity nd variation, systems which rest on a basis f the chromosomes and are related to one nother by processes of natural selection." he author believes that " the combination f the material basis with the evolutionary ramework provides the only means of making sense of biology as a whole." The work accordingly is synthetic, and synthesis is bound to be speculative. The book is far from easy reading, it is in fact one of the most difficult texts I have come across for a long time. But it is full of stimulating ideas which amply repay the trouble involved in ploughing one's way through it. The future will undoubtedly show that in some cases the author has been backing the wrong horse. That, however, is of little account in view of the merit of having linked up in a consistent picture the rather bewildering multitude of phenomena of genetics and cytology.

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Walter, H. E. *Genetics: An introduction to the Study of Heredity.* Fourth Edition. New York, 1938. The Macmillan Company. London, Macmillan & Co. Ltd. Pp. xvii+412. 150 figures. Price 12s. 6d.

IN the preface we are told that this is a new book under an old title, written with a sympathetic eye to the beginner. After a brief introductory chapter, Chapter II deals with a variety of subjects, including " the inheritance of acquired characters," variation, and breeding methods. This is followed by chapters on Mendelism and some of its implications (" The experimental method of approach ") ; on biometry (" The statistical approach ") ; on nuclear cytology ; on the series of modifications—linkage, crossing-over, etc.—of Mendel's laws ; on sex-determination ; and on " The developmental method of approach." Finally there are two chapters on human heredity and eugenics. There are a number of " problems for practice."

There are several grave omissions. No proper account of mitosis or meiosis is even attempted, and such account as is given is inaccurate ; it is clear that the author is unfamiliar with the work of C. D. Darlington and others of the modern school of karyologists (see, e.g., pp. 178, 180, 287). The evolutionary significance of polyploidy in plants is not made clear (p. 220), and indeed the whole of modern evolutionary theory, including the classical work of R. A. Fisher, is ignored. The only adequate account of sex-determination deals with *Drosophila* ; the groups of vertebrates are skimpily treated, and Goldschmidt's important work on *Lymantria dispar* is dismissed in two short paragraphs (p. 244). There is no clear statement of the problems of physiological genetics : the chapter on this subject is full of such statements as : " the biologist holds that, although what an individual *has* and *does* is unquestionably of great importance, . . . what he *is* in the long run is far more important " (p. 281).

The chapters on eugenics are conspicuous for a failure to recognize the extent to which poverty and criminality, as well as other undesirable conditions, are due to environmental factors (pp. 312, 318), although the necessity for " euthenic " measures is admitted. A eugenic programme is favoured, but there is no clear indication as to what such a programme should consist in ; nor is there any reference to the precise knowledge which is available regarding the incidence

and mode of inheritance of inheritable human deficiencies ; it is assumed, without mention of evidence, that a large number of desirable traits are strongly inherited and largely independent of environment. There is a remarkable statement on p. 306 : " For practical purposes it is unimportant to know whether or not feeble-mindedness for example, or any similar defect, is Mendelian in its behaviour or not. The fact that it is *hereditary* is enough to indicate the course of wisdom in the matter." It would appear from this that the author, ignoring the many other relevant considerations such as the imminent disastrous fall in population, would advocate the sterilization, let us say, of an individual one of whose issue in twenty would probably be feeble-minded.

The book is written in a readable style which occasionally develops into facetiousness. There are some confusions : on p. 15, in one paragraph, we are told that the parent is not the producer of the offspring, and immediately afterwards that a hen device for producing an egg. On the page we hear that " it is rather futile to separate the effects " of heredity environment ; yet on p. 152 we have is frequently desirable to distinguish separate from one another the parts p by heredity and environment." The contradictions of this kind must inevi be a source of confusion to the student.

Against these serious deficiencies we put the well-arranged chapters on elements of Mendelian genetics, which full of useful material, and the very account on the elements of statistical met In addition the historical aspect is, de a number of errors, introduced effective several chapters to increase the intere the narrative. Nevertheless, it canno said that these good points are sufficie render the book a valuable contributio the literature of genetics.

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